CLAIMS

1. A signal processing method comprising:

sampling a continuous time process at a first sampling rate to generate a sampled signal having a plurality of sampled data points;

convoluting the sampled signal with a wavelet signal to generate a convoluted signal having a plurality of convoluted data points;

calculating the range between the smallest and largest convoluted data point within each of a plurality of segments of the convoluted signal to generate a range signal having a plurality of range data points; and

performing a moving average calculation on the range signal to generate a moving average signal having a plurality of moving average data points.

2. The signal processing method of claim 1 wherein a continuous time signal is sampled to generate the sampled signal.

3. The signal processing method of claim 1 wherein between said sampling and convoluting the following is performed:

sub-sampling the sampled signal at a second sampling rate to generate a sub-sampled signal having a plurality of sub-sampled data points, the second sampling rate being less than the first sampling rate so that the number of sub-sampled data points is fewer than the number of sampled data points;

and wherein in said convoluting, the sub-sampled signal is convoluted with the wavelet signal to generate the convoluted signal.

4. The signal processing method of claim 1 wherein the sampled signal is a phase angle signal receivable from a phase angle sensor that logs the phase angle of an electric device at the first sampling rate.

5. The signal processing method of claim 4 wherein between said sampling and convoluting the following is performed:

transforming the sampled phase angle signal by subtracting each of the plurality of sampled data points from 90 degrees to generate a transformed phase angle signal having a plurality of transformed data points;

and wherein in said convoluting, the transformed phase angle signal is convoluted with the wavelet signal to generate the convoluted signal.

6. A signal processing method comprising:

logging phase angle data sampled at a first sampling rate to generate a sampled phase angle signal having a plurality of sampled data points;

sub-sampling the sampled phase angle signal at a second sampling rate to generate a sub-sampled phase angle signal having a plurality of sub-sampled data points, the plurality of sub-sampled data points comprising a sub-set of the plurality of sampled data points;

transforming the sub-sampled phase angle signal by subtracting each of the plurality of sub-sampled data points from 90 degrees to generate a transformed phase angle signal having a plurality of transformed data points, the plurality of transformed data points being equal in number to the plurality of sub-sampled data points;

convoluting the transformed phase angle signal with a wavelet signal to generate a convoluted phase angle signal having a plurality of convoluted data points, the plurality of convoluted data points being equal in number to the plurality of transformed data points;

calculating the range between the smallest and largest convoluted data point within each of a plurality of segments of the convoluted phase angle signal to generate a phase angle range signal having a plurality of phase angle range data points, the plurality of phase angle range data points being lesser in number than the plurality of convoluted data points; and

performing a moving average calculation on the phase angle range signal to generate a moving average signal having a plurality of moving average data points, the plurality of moving average data points being equal in number to the plurality of phase angle range data points.

7. The signal processing method of claim 6 wherein the sampled phase angle signal is a motor phase angle signal receivable from a motor phase angle sensor for detecting the phase angle of a dryer motor, and wherein the moving average signal is utilizable in predicting the dryness of clothing articles.

8. The signal processing method of claim 6 wherein the first sampling rate is between about 2 and 10 Hz.

9. The signal processing method of claim 6 wherein the first sampling rate is about 10 Hz.

10. The signal processing method of claim 6 wherein the second sampling rate is between about 1 and 10 Hz.

11. The signal processing method of claim 6 wherein the second sampling rate is about 1 Hz.

12. The signal processing method of claim 6 wherein the wavelet signal is a Lemaire wavelet signal.

13. The signal processing method of claim 6 wherein in said calculating, each said segment, with the possible exception of the last segment, contains a predetermined number of the convoluted data points, the predetermined number being between about 50 and 100.

14. The signal processing method of claim 6 wherein in said calculating each said segment, with the possible exception of the last segment, contains about 100 of the convoluted data points.

15. The signal processing method of claim 6 wherein in said performing a moving average calculation, the moving average calculation is performed twice to generate the moving average signal.

16. The signal processing method of claim 6 wherein in said performing a moving average calculation, the moving average calculation performed is a seven-point moving average calculation.

17. A signal processing system comprising:

a plurality of sampled data points comprising a signal to be processed; and

a microprocessor, said microprocessor being enabled for performing the following operations:

convoluting said sampled data points with a plurality of wavelet data points comprising a wavelet signal to generate a plurality of convoluted data points;

calculating the range between the smallest and largest convoluted data points within each of a plurality of groups of said convoluted data points to generate a plurality of range data points; and

performing a moving average calculation on the range data points to generate a plurality of moving average data points;

wherein said moving average data points comprise a processed version of said signal in which both noise cancellation and data compression have been effected.

18. The signal processing system of claim 17 further comprising:

a motor phase angle sensor for detecting the phase angle of a motor and logging the detected phase angle to said microprocessor at a first sampling rate to thereby generate said sampled data points.

19. The signal processing system of claim 18 wherein said motor phase angle sensor and said microprocessor are included in a clothes dryer and said processed version of said signal is utilized in predicting the dryness of clothing articles.

20. The signal processing system of claim 18 wherein said microprocessor is also enabled for performing the following operations:

sub-sampling said sampled data points at a second sampling rate to generate a plurality of sub-sampled data points; and

subtracting each of the plurality of sub-sampled data points from 90 degrees to generate a plurality of transformed data points;

wherein said microprocessor convolutes said plurality of transformed data points with said wavelet data points to generate said plurality of convoluted data points.